

What is claimed is:

1. A method of cementing in a subterranean formation comprising the steps of:
providing a cement composition comprising a hydraulic cement, water, and a fluid loss control additive, the fluid loss control additive comprising:
an acrylamide copolymer derivative; and
a hydratable polymer;
placing the cement composition into the subterranean formation; and
permitting the cement composition to set therein.
2. The method of claim 1 wherein the acrylamide copolymer derivative comprises a copolymer or copolymer salt of N,N-dimethylacrylamide and 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.
3. The method of claim 1 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of lignin, lignite and their salts and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.
4. The method of claim 1 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of derivatized cellulose, polyvinyl alcohol, polyethylene oxide, polypropylene oxide, and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.
5. The method of claim 1 wherein the acrylamide copolymer derivative comprises copolymers or copolymer salts comprising 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.
6. The method of claim 5 wherein the copolymers or copolymer salts comprise copolymers of hydrolyzed acrylamide and 2-acrylamido-2-methylpropane sulfonic acid derivatives.

7. The method of claim 1 wherein the hydratable polymer comprises carboxymethylcellulose, hydroxyethylcellulose, carboxymethylhydroxyethylcellulose, vinyl sulfonated polymers, hydratable graft polymers, and mixtures thereof.

8. The method of claim 1 wherein the fluid loss control additive further comprises a dispersant.

9. The method of claim 8 wherein the dispersant comprises a water-soluble polymer prepared by the caustic-catalyzed condensation of formaldehyde with acetone wherein the polymer contains sodium sulfate groups.

10. The method of claim 1 wherein the fluid loss control additive further comprises a zeolite.

11. The method of claim 1 wherein the fluid loss control additive further comprises a dispersant and a zeolite.

12. The method of claim 11 wherein the fluid loss control additive further comprises iron chloride, an organic acid, a deaggregation agent, silica, or mixtures thereof.

13. The method of claim 1 wherein the cement comprises Portland cements, pozzolanic cements, gypsum cements, high alumina content cements, silica cements, or high alkalinity cements.

14. The method of claim 1 wherein the water is present in the cement composition in an amount sufficient to form a pumpable slurry.

15. The method of claim 1 wherein the water is present in the cement composition in an amount in the range of from about 15% to about 200% by weight of cement.

16. The method of claim 1 wherein the cement composition has a density in the range of from about 5 pounds per gallon to about 30 pounds per gallon.

17. The method of claim 1 wherein the cement composition further comprises a weighting agent, a defoamer, a surfactant, mica, fiber, bentonite, microspheres, fumed silica, a salt, vitrified shale, fly ash, a dispersant, a retardant or an accelerant.

18. The method of claim 1 wherein the fluid loss control additive is present in the cement composition in an amount sufficient to provide a desired degree of fluid loss control.

19. The method of claim 1 wherein the fluid loss control additive is present in the cement composition in an amount in the range of from about 0.01% by weight of cement to about 5.0% by weight of cement.

20. The method of claim 12 wherein the iron chloride is present in the fluid loss control additive in an amount sufficient to allow the cement to be suitable for the subterranean temperature of the well being cemented.

21. The method of claim 12 wherein the iron chloride is present in the fluid loss control additive in an amount in the range of from about 5% to about 25% by weight of the fluid loss control additive.

22. The method of claim 12 wherein the iron chloride is anhydrous ferric chloride.

23. The method of claim 8 wherein the dispersant is present in the fluid loss control additive in an amount sufficient to prevent gelation of the cement composition.

24. The method of claim 8 wherein the dispersant is present in the fluid loss control additive in an amount in the range of from about 25% to about 50% by weight of the fluid loss control additive.

25. The method of claim 1 wherein the hydratable polymer is present in the fluid loss control additive in an amount in the range of from about 0.1% to about 15% by weight of the fluid loss control additive.

26. The method of claim 12 wherein the organic acid is present in the fluid loss control additive in an amount sufficient to provide a desired degree of viscosity control.

27. The method of claim 12 wherein the organic acid is present in the fluid loss control additive in an amount in the range of from about 0.01% to about 5% by weight of the fluid loss control additive.

28. The method of claim 12 wherein the silica is high surface area amorphous silica.

29. The method of claim 12 wherein the de-aggregation agent is present in the fluid loss control additive in an amount sufficient to enable the fluid loss control additive to flow freely as a powder.

30. The method of claim 29 wherein the de-aggregation agent is present in the fluid loss control additive in an amount in the range of from about 1% to about 15% by weight of the fluid loss control additive.

31. The method of claim 28 wherein the high surface area amorphous silica is present in the fluid loss control additive in an amount sufficient to provide a desired after-set compressive strength.

32. The method of claim 28 wherein the high surface area amorphous silica is present in the fluid loss control additive in an amount in the range of from about 0.1% to about 15% by weight of the fluid loss control additive.

33. The method of claim 1 wherein the acrylamide copolymer derivative is present in the fluid loss control additive in an amount in the range of from about 1% to about 99% by weight.

34. The method of claim 2 wherein the copolymer or copolymer salt has a N,N-dimethylacrylamide to 2-acrylamido-2-methylpropane sulfonic acid (or acid salts thereof) mole ratio of from about 1:4 to about 4:1.

35. The method of claim 2 wherein the copolymer or copolymer salt has a weight average molecular weight of between about 75,000 and about 300,000 daltons.

36. The method of claim 10 wherein the zeolite further comprises chabazite and amorphous silica.

37. The method of claim 10 wherein the zeolite is present in the fluid loss control additive in an amount in the range of from about 0.1% to about 15% by weight of the fluid loss control additive.

38. The method of claim 1 wherein the fluid loss control additive is present in the cement composition in an amount in the range of from about 0.25% to about 1.5% by weight of the cement; wherein the hydratable polymer is present in the fluid loss control additive in an amount in the range of from about 1.5% to about 4.5% by weight; wherein the acrylamide copolymer derivative is present in the fluid loss control additive in an amount in the range of from about 40% by weight to about 50% by weight; wherein the dispersing agent is present in the fluid loss control additive in an amount in the range of from about 40% to about 60% by weight; wherein the zeolite is present in the fluid loss control additive in an amount in the range of from about 1% by weight to about 10% by weight.

39. A method of cementing in a subterranean formation comprising the steps of:
providing a cement composition comprising a hydraulic cement, water, and a fluid loss control additive, the fluid loss control additive comprising:

an acrylamide copolymer derivative; and
a dispersant;

placing the cement composition into the subterranean formation; and
permitting the cement composition to set therein.

40. The method of claim 39 wherein the acrylamide copolymer derivative comprises a copolymer or copolymer salt of N,N-dimethylacrylamide and 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

41. The method of claim 39 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of lignin, lignite and their salts and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

42. The method of claim 39 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of derivatized cellulose, polyvinyl alcohol, polyethylene oxide, polypropylene oxide, and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

43. The method of claim 39 wherein the acrylamide copolymer derivative comprises copolymers or copolymer salts comprising 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

44. The method of claim 43 wherein the copolymers or copolymer salts comprise copolymers of hydrolyzed acrylamide and 2-acrylamido-2-methylpropane sulfonic acid derivatives.

45. The method of claim 39 wherein the fluid loss control additive further comprises a hydratable polymer and zeolite.

46. A method of reducing the fluid loss from a cement composition, comprising the step of adding to the cement composition a fluid loss control additive comprising:

an acrylamide copolymer derivative; and
a hydratable polymer.

47. The method of claim 46 wherein the acrylamide copolymer derivative comprises a copolymer or copolymer salt of N,N-dimethylacrylamide and 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

48. The method of claim 46 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of lignin, lignite and their salts and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

49. The method of claim 46 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of derivatized cellulose, polyvinyl alcohol, polyethylene oxide, polypropylene oxide, and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

50. The method of claim 46 wherein the acrylamide copolymer derivative comprises copolymers or copolymer salts comprising 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

51. The method of claim 50 wherein the copolymers or copolymer salts comprise copolymers of hydrolyzed acrylamide and 2-acrylamido-2-methylpropane sulfonic acid derivatives.

52. The method of claim 46 wherein the hydratable polymer comprises carboxymethylcellulose, hydroxyethylcellulose, carboxymethylhydroxyethylcellulose, vinyl sulfonated polymers, hydratable graft polymers, and mixtures thereof.

53. The method of claim 46 wherein the fluid loss control additive further comprises a dispersant.

54. The method of claim 53 wherein the dispersant comprises a water-soluble polymer prepared by the caustic-catalyzed condensation of formaldehyde with acetone wherein the polymer contains sodium sulfate groups.

55. The method of claim 46 wherein the fluid loss control additive further comprises a zeolite.

56. The method of claim 46 wherein the fluid loss control additive further comprises a dispersant and a zeolite.

57. The method of claim 56 wherein the fluid loss control additive further comprises iron chloride, an organic acid, a deaggregation agent, silica, or mixtures thereof.

58. The method of claim 46 wherein the cement composition comprises Portland cements, pozzolanic cements, gypsum cements, high alumina content cements, silica cements, or high alkalinity cements.

59. The method of claim 46 wherein the cement composition comprises water present in an amount sufficient to form a pumpable slurry.

60. The method of claim 59 wherein the water is present in the cement composition in an amount in the range of from about 15% by weight of cement to about 200% by weight of cement.

61. The method of claim 46 wherein the cement composition has a density in the range of from about 5 pounds per gallon to about 30 pounds per gallon.

62. The method of claim 46 wherein the cement composition further comprises a weighting agent, a defoamer, a surfactant, mica, fiber, bentonite, microspheres, fumed silica, a salt, vitrified shale, fly ash, a dispersant, a retardant or an accelerant.

63. The method of claim 46 wherein the fluid loss control additive is present in the cement composition in an amount sufficient to provide a desired degree of fluid loss control.

64. The method of claim 46 wherein the fluid loss control additive is present in the cement composition in an amount in the range of from about 0.01% by weight of cement to about 5.0% by weight of cement.

65. The method of claim 57 wherein the iron chloride is present in the fluid loss control additive in an amount sufficient to allow the cement to be suitable for the subterranean temperature of the well being cemented.

66. The method of claim 57 wherein the iron chloride is present in the fluid loss control additive in an amount in the range of from about 5% to about 25% by weight of the fluid loss control additive.

67. The method of claim 57 wherein the iron chloride is anhydrous ferric chloride.

68. The method of claim 53 wherein the dispersant is present in the fluid loss control additive in an amount sufficient to prevent gelation of the cement composition.

69. The method of claim 53 wherein the dispersant is present in the fluid loss control additive in an amount in the range of from about 25% to about 50% by weight of the fluid loss control additive.

70. The method of claim 46 wherein the hydratable polymer is present in the fluid loss control additive in an amount in the range of from about 0.1% to about 15% by weight of the fluid loss control additive.

71. The method of claim 57 wherein the organic acid is present in the fluid loss control additive in an amount sufficient to provide a desired degree of viscosity control.

72. The method of claim 57 wherein the organic acid is present in the fluid loss control additive in an amount in the range of from about 0.01% to about 5% by weight of the fluid loss control additive.

73. The method of claim 57 wherein the silica is high surface area amorphous silica.

74. The method of claim 57 wherein the de-aggregation agent is present in the fluid loss control additive in an amount sufficient to enable the fluid loss control additive to flow freely as a powder.

75. The method of claim 57 wherein the de-aggregation agent is present in the fluid loss control additive in an amount in the range of from about 1% to about 15% by weight of the fluid loss control additive.

76. The method of claim 73 wherein the high surface area amorphous silica is present in the fluid loss control additive in an amount sufficient to provide a desired after-set compressive strength.

77. The method of claim 73 wherein the high surface area amorphous silica is present in the fluid loss control additive in an amount in the range of from about 0.1% to about 15% by weight of the fluid loss control additive.

78. The method of claim 46 wherein the acrylamide copolymer derivative is present in the fluid loss control additive in an amount in the range of from about 1% to about 99% by weight.

79. The method of claim 47 wherein the copolymer or copolymer salt has a N,N-dimethylacrylamide to 2-acrylamido-2-methylpropane sulfonic acid (or acid salts thereof) mole ratio of from about 1:4 to about 4:1.

80. The method of claim 47 wherein the copolymer or copolymer salt has a weight average molecular weight of between about 75,000 and about 300,000 daltons.

81. The method of claim 55 wherein the zeolite further comprises chabazite and amorphous silica.

82. The method of claim 55 wherein the zeolite is present in the fluid loss control additive in an amount in the range of from about 0.1% to about 15% by weight.

83. The method of claim 46 wherein the fluid loss control additive is present in the cement composition in an amount in the range of from about 0.25% to about 1.5% by weight of the cement; wherein the hydratable polymer is present in the fluid loss control additive in an amount in the range of from about 1.5% to about 4.5% by weight; wherein the acrylamide copolymer derivative is present in the fluid loss control additive in an amount in the range of from about 40% by weight to about 50% by weight; wherein the dispersing agent is present in the fluid loss control additive in an amount in the range of from about 40% to about 60% by weight; wherein the zeolite is present in the fluid loss control additive in an amount in the range of from about 1% by weight to about 10% by weight.

84. A method of reducing the fluid loss from a cement composition, comprising the step of adding to the cement composition a fluid loss control additive comprising:

an acrylamide copolymer derivative; and
a dispersant.

85. The method of claim 84 wherein the acrylamide copolymer derivative comprises a copolymer or copolymer salt of N,N-dimethylacrylamide and 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

86. The method of claim 84 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of lignin, lignite and their salts and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

87. The method of claim 84 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of derivatized cellulose, polyvinyl alcohol, polyethylene oxide, polypropylene oxide, and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

88. The method of claim 84 wherein the acrylamide copolymer derivative comprises copolymers or copolymer salts comprising 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

89. The method of claim 88 wherein the copolymers or copolymer salts comprise copolymers of hydrolyzed acrylamide and 2-acrylamido-2-methylpropane sulfonic acid derivatives.

90. The method of claim 84 wherein the fluid loss control additive further comprises a hydratable polymer and zeolite.

91. A cement composition comprising a hydraulic cement, water, and a fluid loss control additive, the fluid loss control additive comprising:

an acrylamide copolymer derivative; and
a hydratable polymer.

92. The cement composition of claim 91 wherein the acrylamide copolymer derivative comprises a copolymer or copolymer salt of N,N-dimethylacrylamide and 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

93. The cement composition of claim 91 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of lignin, lignite and their salts and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

94. The cement composition of claim 91 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of derivatized cellulose, polyvinyl alcohol, polyethylene oxide, polypropylene oxide, and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

95. The cement composition of claim 91 wherein the acrylamide copolymer derivative comprises copolymers or copolymer salts comprising 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

96. The cement composition of claim 95 wherein the copolymers or copolymer salts comprise copolymers of hydrolyzed acrylamide and 2-acrylamido-2-methylpropane sulfonic acid derivatives.

97. The cement composition of claim 91 wherein the hydratable polymer comprises carboxymethylcellulose, hydroxyethylcellulose, carboxymethylhydroxyethylcellulose, vinyl sulfonated polymers, hydratable graft polymers, and mixtures thereof.

98. The cement composition of claim 91 wherein the fluid loss control additive further comprises a dispersant.

99. The cement composition of claim 98 wherein the dispersant comprises a water-soluble polymer prepared by the caustic-catalyzed condensation of formaldehyde with acetone wherein the polymer contains sodium sulfate groups.

100. The cement composition of claim 91 wherein the fluid loss control additive further comprises a zeolite.

101. The cement composition of claim 91 wherein the fluid loss control additive further comprises a dispersant and a zeolite.

102. The cement composition of claim 101 wherein the fluid loss control additive further comprises iron chloride, an organic acid, a deaggregation agent, silica, or mixtures thereof.

103. The cement composition of claim 91 wherein the hydraulic cement comprises Portland cements, pozzolanic cements, gypsum cements, high alumina content cements, silica cements, or high alkalinity cements.

104. The cement composition of claim 91 wherein the water is present in the cement composition in an amount sufficient to form a pumpable slurry.

105. The cement composition of claim 91 wherein the water is present in the cement composition in an amount in the range of from about 15% by weight of cement to about 200% by weight of cement.

106. The cement composition of claim 91 wherein the cement composition has a density in the range of from about 5 pounds per gallon to about 30 pounds per gallon.

107. The cement composition of claim 91 wherein the cement composition further comprises a weighting agent, a defoamer, a surfactant, mica, fiber, bentonite, microspheres, fumed silica, a salt, vitrified shale, fly ash, a dispersant, a retardant or an accelerant.

108. The cement composition of claim 91 wherein the fluid loss control additive is present in the cement composition in an amount sufficient to provide a desired degree of fluid loss control.

109. The cement composition of claim 91 wherein the fluid loss control additive is present in the cement composition in an amount in the range of from about 0.01% by weight of cement to about 5.0% by weight of cement.

110. The cement composition of claim 102 wherein the iron chloride is present in the fluid loss control additive in an amount sufficient to allow the cement to be suitable for the subterranean temperature of the well being cemented.

111. The cement composition of claim 102 wherein the iron chloride is present in the fluid loss control additive in an amount in the range of from about 5% to about 25% by weight of the fluid loss control additive.

112. The cement composition of claim 102 wherein the iron chloride is anhydrous ferric chloride.

113. The cement composition of claim 98 wherein the dispersant is present in the fluid loss control additive in an amount sufficient to prevent gelation of the cement composition.

114. The cement composition of claim 98 wherein the dispersant is present in the fluid loss control additive in an amount in the range of from about 25% to about 50% by weight of the fluid loss control additive.

115. The cement composition of claim 91 wherein the hydratable polymer is present in the fluid loss control additive in an amount in the range of from about 0.1% to about 15% by weight of the fluid loss control additive.

116. The cement composition of claim 102 wherein the organic acid is present in the fluid loss control additive in an amount sufficient to provide a desired degree of viscosity control.

117. The cement composition of claim 102 wherein the organic acid is present in the fluid loss control additive in an amount in the range of from about 0.01% to about 5% by weight of the fluid loss control additive.

118. The cement composition of claim 102 wherein the silica is high surface area amorphous silica.

119. The cement composition of claim 102 wherein the de-aggregation agent is present in the fluid loss control additive in an amount sufficient to enable the fluid loss control additive to flow freely as a powder.

120. The cement composition of claim 102 wherein the de-aggregation agent is present in the fluid loss control additive in an amount in the range of from about 1% to about 15% by weight of the fluid loss control additive.

121. The cement composition of claim 118 wherein the high surface area amorphous silica is present in the fluid loss control additive in an amount sufficient to provide a desired after-set compressive strength.

122. The cement composition of claim 118 wherein the high surface area amorphous silica is present in the fluid loss control additive in an amount in the range of from about 0.1% to about 15% by weight of the fluid loss control additive.

123. The cement composition of claim 91 wherein the acrylamide copolymer derivative is present in the fluid loss control additive in an amount in the range of from about 1% to about 99% by weight.

124. The cement composition of claim 92 wherein the copolymer or copolymer salt has a N,N-dimethylacrylamide to 2-acrylamido-2-methylpropane sulfonic acid (or acid salts thereof) mole ratio of from about 1:4 to about 4:1.

125. The cement composition of claim 92 wherein the copolymer or copolymer salt has a weight average molecular weight of between about 75,000 and about 300,000 daltons.

126. The cement composition of claim 100 wherein the zeolite further comprises chabazite and amorphous silica.

127. The cement composition of claim 100 wherein the zeolite is present in the fluid loss control additive in an amount in the range of from about 0.1% to about 15% by weight of the fluid loss control additive.

128. The cement composition of claim 91 wherein the fluid loss control additive is present in the cement composition in an amount in the range of from about 0.25% to about 1.5% by weight of the cement; wherein the hydratable polymer is present in the fluid loss control additive in an amount in the range of from about 1.5% to about 4.5% by weight; wherein the acrylamide copolymer derivative is present in the fluid loss control additive in an amount in the range of from about 40% by weight to about 50% by weight; wherein the dispersing agent is present in the fluid loss control additive in an amount in the range of from about in the range of from about 40% to about 60% by weight; wherein the zeolite is present in the fluid loss control additive in an amount in the range of from about 1% by weight to about 10% by weight.

129. A cement composition comprising a hydraulic cement, water, and a fluid loss control additive, the fluid loss control additive comprising:

an acrylamide copolymer derivative; and
a dispersant.

130. The cement composition of claim 129 wherein the acrylamide copolymer derivative comprises a copolymer or copolymer salt of N,N-dimethylacrylamide and 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

131. The cement composition of claim 129 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of lignin, lignite and their salts and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

132. The cement composition of claim 129 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of derivatized cellulose, polyvinyl alcohol, polyethylene oxide, polypropylene oxide, and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

133. The cement composition of claim 129 wherein the acrylamide copolymer derivative comprises copolymers or copolymer salts comprising 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

134. The cement composition of claim 133 wherein the copolymers or copolymer salts comprise copolymers of hydrolyzed acrylamide and 2-acrylamido-2-methylpropane sulfonic acid derivatives.

135. The cement composition of claim 129 wherein the fluid loss control additive further comprises a hydratable polymer and zeolite.

136. A fluid loss control additive comprising:

an acrylamide copolymer derivative; and
a hydratable polymer.

137. The fluid loss control additive of claim 136 wherein the acrylamide copolymer derivative comprises a copolymer or copolymer salt of N,N-dimethylacrylamide and 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

138. The fluid loss control additive of claim 136 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of lignin, lignite and their salts and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

139. The fluid loss control additive of claim 136 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of derivatized cellulose, polyvinyl alcohol, polyethylene oxide, polypropylene oxide, and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

140. The fluid loss control additive of claim 136 wherein the acrylamide copolymer derivative comprises copolymers or copolymer salts comprising 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

141. The fluid loss control additive of claim 140 wherein the copolymers or copolymer salts comprise copolymers of hydrolyzed acrylamide and 2-acrylamido-2-methylpropane sulfonic acid derivatives.

142. The fluid loss control additive of claim 136 wherein the hydratable polymer comprises carboxymethylcellulose, hydroxyethylcellulose, carboxymethylhydroxyethylcellulose, vinyl sulfonated polymers, hydratable graft polymers, and mixtures thereof.

143. The fluid loss control additive of claim 136 further comprising a dispersant.
144. The fluid loss control additive of claim 143 wherein the dispersant comprises a water-soluble polymer prepared by the caustic-catalyzed condensation of formaldehyde with acetone wherein the polymer contains sodium sulfate groups.
145. The fluid loss control additive of claim 136 further comprising a zeolite.
146. The fluid loss control additive of claim 136 further comprising a dispersant and a zeolite.
147. The fluid loss control additive of claim 146 further comprising iron chloride, an organic acid, a deaggregation agent, silica, or mixtures thereof.
148. The fluid loss control additive of claim 147 wherein the iron chloride is present in an amount sufficient to allow a cement composition to be suitable for the subterranean temperature of the well being cemented.
149. The fluid loss control additive of claim 147 wherein the iron chloride is present in an amount in the range of from about 5% to about 25% by weight of the fluid loss control additive.
150. The fluid loss control additive of claim 147 wherein the iron chloride is anhydrous ferric chloride.
151. The fluid loss control additive of claim 143 wherein the dispersant is present in an amount sufficient to prevent gelation of a cement composition.
152. The fluid loss control additive of claim 143 wherein the dispersant is present in an amount in the range of from about 25% to about 50% by weight of the fluid loss control additive.
153. The fluid loss control additive of claim 136 wherein the hydratable polymer is present in an amount in the range of from about 0.1% to about 15% by weight of the fluid loss control additive.
154. The fluid loss control additive of claim 147 wherein the organic acid is present in an amount sufficient to provide a desired degree of viscosity control.
155. The fluid loss control additive of claim 147 wherein the organic acid is present in an amount in the range of from about 0.01% to about 5% by weight of the fluid loss control additive.
156. The fluid loss control additive of claim 147 wherein the silica is high surface area amorphous silica.

157. The fluid loss control additive of claim 147 wherein the de-aggregation agent is present in an amount sufficient to enable the fluid loss control additive to flow freely as a powder.

158. The fluid loss control additive of claim 147 wherein the de-aggregation agent is present in an amount in the range of from about 1% to about 15% by weight of the fluid loss control additive.

159. The fluid loss control additive of claim 156 wherein the high surface area amorphous silica is present in an amount sufficient to provide a desired after-set compressive strength.

160. The fluid loss control additive of claim 156 wherein the high surface area amorphous silica is present in an amount in the range of from about 0.1% to about 15% by weight of the fluid loss control additive.

161. The fluid loss control additive of claim 136 wherein the acrylamide copolymer derivative is present in an amount in the range of from about 1% to about 99% by weight.

162. The fluid loss control additive of claim 137 wherein the copolymer or copolymer salt has a N,N-dimethylacrylamide to 2-acrylamido-2-methylpropane sulfonic acid (or acid salts thereof) mole ratio of from about 1:4 to about 4:1.

163. The fluid loss control additive of claim 137 wherein the copolymer or copolymer salt has a weight average molecular weight of between about 75,000 and about 300,000 daltons.

164. The fluid loss control additive of claim 145 wherein the zeolite further comprises chabazite and amorphous silica.

165. The fluid loss control additive of claim 145 wherein the zeolite is present in an amount in the range of from about 0.1% to about 15% by weight.

166. The fluid loss control additive of claim 136 wherein the fluid loss control additive is present in the cement composition in an amount in the range of from about 0.25% to about 1.5% by weight of the cement; wherein the hydratable polymer is present in the fluid loss control additive in an amount in the range of from about 1.5% to about 4.5% by weight; wherein the acrylamide copolymer derivative is present in the fluid loss control additive in an amount in the range of from about 40% by weight to about 50% by weight; wherein the dispersing agent is present in the fluid loss control additive in an amount in the range of from about in the range of

from about 40% to about 60% by weight; wherein the zeolite is present in the fluid loss control additive in an amount in the range of from about 1% by weight to about 10% by weight.

167. A fluid loss control additive comprising:
an acrylamide copolymer derivative; and
a dispersant.

168. The fluid loss control additive of claim 167 wherein the acrylamide copolymer derivative comprises a copolymer or copolymer salt of N,N-dimethylacrylamide and 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

169. The fluid loss control additive of claim 167 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of lignin, lignite and their salts and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

170. The fluid loss control additive of claim 167 wherein the acrylamide copolymer derivative comprises a graft polymer comprising a backbone comprising at least one member selected from the group consisting of derivatized cellulose, polyvinyl alcohol, polyethylene oxide, polypropylene oxide, and a grafted pendant group comprising at least one member selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid, N,N-dialkylaminoethylmethacrylate wherein the alkyl radical comprises at least one member selected from the group consisting of methyl, ethyl and propyl radicals.

171. The fluid loss control additive of claim 167 wherein the acrylamide copolymer derivative comprises copolymers or copolymer salts comprising 2-acrylamido-2-methylpropane sulfonic acid or acid salts thereof.

172. The fluid loss control additive of claim 171 wherein the copolymers or copolymer salts comprise copolymers of hydrolyzed acrylamide and 2-acrylamido-2-methylpropane sulfonic acid derivatives.

173. The fluid loss control additive of claim 167 further comprising a hydratable polymer and a zeolite.

174. The fluid loss control additive of claim 167 wherein the dispersant comprises a water-soluble polymer prepared by the caustic-catalyzed condensation of formaldehyde with acetone wherein the polymer contains sodium sulfate groups.